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CERTIFICATE

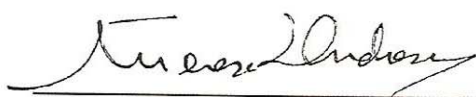
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**THE IMPACT OF MIND ON NATURE. LESSONS LEARNED FROM THE
ECOLOGY-AESTHETICS INTERPLAY**

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The Impact of Mind on Nature. Lessons Learned from the Ecology-Aesthetics Interplay

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The effects of nature on people's mind have been an active research theme for decades. However, the impact of people's mind on landscape ecological health has received less attention. How and why perception, meanings and mental constructs determine the way nature is valued and consequently managed? How this interplay should be? These are in some cases more relevant questions than knowing what particular landscapes are preferred (Carlson 1993).

This was the underlying inquiry in the focus group experience held in a natural protected area in La Rioja (Spain). Participants were asked to locate in a map areas representing low/high quality in terms of ecology and aesthetics.

Some relevant conclusions for landscape management were derived from the analysis of participant's discourse in terms of ecological aesthetic appreciation and their consideration about how human takes place in nature.

1-INTRODUCTION

The need to integrate the social dimension of landscape with the type of information typically found in the ecological health assessment has been repeatedly claimed to be critical, since perceptions, values, and attitudes do not follow spatial patterns in the same manner as biophysical information do (Ryan, 2011). Our response to the environment is in part determined by our aesthetic experience, which in turn shape in some degree our decisions about landscapes. The use of the charisma of endangered or iconic species to capture public attention and gain support for nature conservation is one of the most paradigmatic phenomenon of resonance of aesthetics in ecological management.

Three important reasons for considering aesthetics to anticipate landscape change and environmental impacts can be traced: landscape aesthetics provides a critical linkage between humans and ecological processes, aesthetic experiences can drive the landscape change, and the attention to ecological quality can be influenced by the perceived aesthetic value of landscape (Gobster et al. 2007). People usually appreciate ecologically rich environments, but also draw conclusions about ecological quality based on their aesthetic preferences (Parsons, 1995; Nassauer, 2011). Are "ugly" or undistinguished landscapes likely to be less protected?

The problem with the appearance of ecological systems are sometimes their false identity, the deceit provoked by some designs and the frequent invisibility of ecological function (Nassauer, 1992). How and why some landscape are appreciated seems then as important as knowing what particular landscapes are preferred (Carlson, 1993).

2-OBJECTIVES AND RESEARCH APPROACH

How and why perception, meanings and mental constructs determine the way nature is valued and consequently managed? How ecology and aesthetics interplay shaping some attitudes? This was the underlying inquiry in the focus group experience



FIGURE 1. Location of the area study (darker color) and the nature reserve limits (dotted line)



FIGURE 2. Lomos de Orios, a well known cultural site in Sierra Cebollera

held in Sierra Cebollera, a mountainous area which was partly declared as a natural protected area in La Rioja (Spain) (Figure 1). The group dynamic combined specific place mapping with a group interview focused on the evaluation of ecological and aesthetic quality.

Different members of the regional environmental administration and local population were invited. The group was finally formed by 6 professionals from planning and environmental administration, and a local government agent, who was the only one permanently living in the area.

All participants were asked to locate in a basic map 2 locations in each of this four categories: high and low landscape ecological quality; high and low landscape aesthetic quality. They were also asked to explain their choices and their judgments about the right and wrong conditions in landscape. A qualitative analysis of the places selected and what they said, how they said it and why, was the substrate to shape their conceptions of aesthetics of landscape and how it determined their ecological evaluation.

The aim of the study was to gain insights into the way both dimensions are related rather than to obtain a representative overview of attitudes. The results are intended to serve as a base for reflection on how the ecology-aesthetic interplay works and derive theoretical consequences for landscape management.

3-RESULTS

Concepts Of Human Place In Landscape As The Base For Evaluation

A different evaluation of the general state of the landscape clearly emerged from the beginning of the discussions. The general impression of a healthy and admirable landscape held by environmental professionals contrasted with the social dysfunction that the local immediately expressed as a threat. The local participant also expressed a feeling of proud and acclaimed the ecological and aesthetic qualities of the landscape, but put these values into perspective highlighting the effects of the population drift. The consequences for aesthetic and ecological quality were also asserted.

"The low value locations are difficult to select, this is one of the most beautiful areas in La Rioja and there has been little impact" / "Yes, it is a very beautiful area but... we are running out of population [...] As I sometimes say, the people of the county will be treated as an endangered species"

The different notion of the socio-ecological system and

the position as an outsider or insider explains this different perception. It determined the personal balance between social and natural worth and made the participants articulate a distinctive discourse when dealing with the ecology-aesthetic interplay.

The notion of humans as participants in the landscape of the local, contrasted with the idea of man as an external agent of the rest of the group. The environmental professionals conceived the landscape as a scene-reserve, and natural/wild character was revealed as the key feature. The local participant always interpreted the ecological appropriateness of human interventions referencing the social convenience. The former brought to bear the ecological dimension compared to cultural or social, expressing a confidence in the appropriateness of the institutional management. The later expressed doubts about institutional governance, highlighting the importance of an active maintenance of landscape by inhabitants.

"Additionally, there are many cultural sites which gives added-value to the great natural capital of the county" (Figure 2) / "It seems to me derelict, because the fields for vegetable cultivation are life and there are people working there and if not, the fields are unkempt and they get invaded by brushwood" (Figure 3)

Interplay Between Ecological And Aesthetical Appreciation

An examination of areas marked in the maps, of the reasoning and the vocabulary employed, combined with the analysis of missing choices revealed underlying connections determining how both dimensions were evaluated.

Concerning the map locations, more than a half of choices were appreciated or disapproved because of both aspects: high ecological-high aesthetic or low ecological-low aesthetic quality at the same time (Figure 4). A clear tendency to concentrate this perceived dual quality in a particular area was observed: this area presents a marked wild character, it is highly visited and acts as an icon of the nature reserve. Conversely, the negative opinions were directed to massive constructions with a significant visual impact because of its artificializing effect.

An examination of the vocabulary employed in the comments revealed an intermingled use of aesthetical and ecological terms. This was present in some degree in all participants interventions, although the use of aesthetics terms when reasoning the ecological base was much higher than the use of ecological terms to illustrate the considerations about aesthetics.



FIGURE 3. Small family orchards in Nieva de Cameros

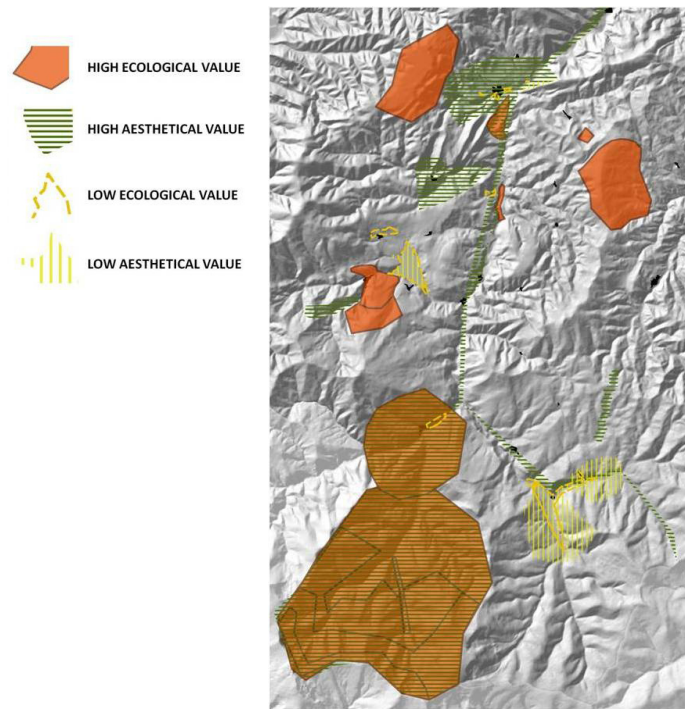


FIGURE 4. Areas marked by participants as having high ecological value (red solid), high aesthetic value (horizontal green line fill), low ecological value (yellow dashed line) and low aesthetic value (vertical yellow line fill)

"It is an ugly [stressed] poplar plantation near Peñaclara. It is ecologically unsustainable, although it is small"

Any location perceived as having an inverse relation of values was selected: "ugly" landscapes inspiring appropriate ecological functioning or conversely. A close examination to comments and elements not referred can elucidate the ecological-aesthetic interplay.

A case widely commented by participants corresponded to the presence of two great artificial reservoirs. While the impact of the dam was qualified as high in both, ecological and aesthetic terms, the judgment of the presence of standing water was more complex. Some participants specifically made the distinction between the dam and the surface of water while others evaluated it as a whole, underlining the balance of lost resources by flooding.

"I specially dislike the cemented dam, I think they are horrible. The water surface has a high visual quality to me, even ecological in some points, but the cemented dam don't"

"I don't like reservoirs, I think they are a huge impact in the territory [...] if you construct a dam in Puente Rá falls, which is a really beautiful site, you harm the surroundings. Then, you should considerate how the river was before"

Another participant assigned a more negative ecological and aesthetic perception to a particular reservoir, concluding that the visual significance of the perturbation or the lack of recreational use explained part of his reaction (Figure 5).

The evaluation of the presence of new urbanizations or mines also showed a complex ecology-aesthetics interplay: they were positioned as an ecological impact but visual arguments leak out in the explanation, revealing an integrative notion of values.

"In terms of ecology, maybe to me the most significant element are the mines, they seem to me a real wound. Then, this mine, although not very visible, is like a blemish in the territory".

Firebreaks did not receive any comment, despite the fact that they presented some of the characteristics argued to qualify other elements as an impact, especially a visual one: artificializing element in a sensitive landscape, concentrated in the area repeatedly selected by the group as having high ecological-aesthetic quality, they are highly visible and were not designed following landscape integration standards (Figure 6). This absence could be explained in part by the symbolic dimension: firebreaks inspire a sense of protection of the natural capital so that, even if their visual impact is high, they are considered a sort of "ecological impact".

4 - CONSIDERATIONS FOR LANDSCAPE MANAGEMENT

The different evaluation of landscape within the group can be interpreted as a result of different set of values but also as the consequence of giving greater emphasis to the level of management over which agents have influence. Institutional governance, appropriate to manage the global health and image of the landscape, should be in constant touch with local care, which affects everyday landscape. Place attachment is a powerful motivation for landscape conservation and represents an opportunity for increased stewardship. More visible and close signs of institutional intervention would promote local awareness and acceptance (Sheppard, 2001).

Aesthetics eloquence captured the attention to the most striking or outstanding cases. Being useful to consolidate the appreciation of these zones, it diverted the attention from the so-called intermediate landscapes. "Neutral" qualities can be an opportunity to apply a more flexible management in protected areas, as they are less subjected to aesthetic "scrutiny". Not remarkable landscapes out of nature reserve are however critical zones, as these are frequently the landscapes exposed to change and degradation.



FIGURE 5. Views of the reservoir in different times



FIGURE 6. View of a firebreak in Sierra Cebollera, near a recreational area

The experience revealed the influence that symbolic meaning can have in landscape appreciation. The mechanisms by which this dimension operates deserve more exploration. How the symbolic meaning vary depending on the landscape context? Would the firebreaks suggest a different evaluation if the perceived value of the landscape were different?

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